

NEW SPECIES OF SERICA (SCARABÆIDÆ), VII

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The name *alternata* has served for many years to ease the taxonomic conscience about California species of *Serica*, just as the name *vespertina* did about eastern species which could not be identified. The California species are, however, much more numerous and therefore more difficult to recognize. In many forms, individual variation in external characters exceeds specific differentiation in the genus. The writer therefore believes that the species can never be recognized from general descriptions no matter how fully and carefully they are drawn up. This view was especially forced upon him in working on the forms named in the present paper. Full descriptions were first drafted from the holotype specimens and then the paratype series checked against the descriptions. The result was chaos, and the writer feels that to publish such descriptions would be a gesture lacking in sincerity. It is hoped that the brief descriptive notes which follow may be of some value, but the real diagnoses are frankly the writer's figures of the genital armatures of the males.

Serica alternata Le Conte

Serica alternata Le Conte. Journ. Acad. Nat. Sci., Phil., 2, III, p. 276, 1856.

The writer is indebted to Dr. Nathan Banks for the privilege of studying the Le Conte material and extracting the genitalia of the males. Three specimens bear the original type number, 3219, and two appear to have been added later. Since numbers 1 and 3 are females, number 2 should be regarded as the holotype. The type locality is recorded as San Diego, California. Specimen number 4 is a female of another species, and number 5 is a male conspecific with number 2.

Male. Length 7 to 9.5 mm.; width 4 to 5 mm. Color dark chestnut; surface subshining and elytra moderately iridescent. Disk of clypeus slightly tumid in its apical third, finely and

densely punctured, margins of clypeus moderately reflexed, anterior angles prominent and broadly rounded, clypeal notch obsolete; front more finely and sparsely punctured than clypeus. Measurements of head in mm.: diameter through the eyes, 2.2; distance between inner eye margins, 1.4; extreme width of anterior reflexed margin, 1.2; antennal club, 0.75; dorso-ventral diameter of eye, 0.75. Pronotum subshining, finely and closely punctate; width through posterior angles, 3.6 mm.; width through anterior angles, 2.4; median length, 2.1. Elytra with distinct, almost line-like striae showing about three confused rows of fine punctures. Intervals only slightly convex and sparsely punctured. Alternate intervals 2, 4, 6, etc., slightly wider than the others. This character, which accounts for the name *alternata*, is not specific, but almost subgeneric.

The specimen from which the detailed measurements were taken, and from which the figures (Pl. XL) were drafted measures 8.5 mm. in length, bears the label "Carmel, Calif., VI, 23, 1933, L. S. Slevin," and is being deposited in the U. S. National Museum. Length of male genital armature 2.5 mm.

Specimens examined: 280 ♂, 94 ♀.

New Mexico: "N. Mex.," 2 ♂; Koehler, 1 ♀; Las Vegas, 2 ♀; Magdalena Mts., 1 ♀; White Mts., Rio Ruidoso, 1 ♂, 2 ♀.

Colorado: "Col.," 1 ♂; Buena Vista, 1 ♂; Durango, 1 ♂; San Miguel, 1 ♂; South Park Region, 1 ♂.

Arizona: "Ariz.," 1 ♂, 1 ♀; Ash Creek, Graham Mts., 1 ♂; Grand Canyon, 1 ♂, 1 ♀; Oak Creek Canyon, 2 ♀; Oracle, 1 ♂; Prescott, 1 ♂; Verde Valley, 1 ♀.

California: "Calif.," 5 ♂, 2 ♀; Alhambra, 3 ♂; Atwell Mill, Tulare Co., 1 ♂; Arroyo Seco Creek, Monterey Co., 1 ♂, 1 ♀; Bakersfield, 1 ♀; Carmel, 180 ♂, 18 ♀; Chittenden, 1 ♂; Claremont, 1 ♂; Colton, 1 ♂; Cuyamaca Mts., San Diego Co., 1 ♂; Garden Grove, 2 ♂, 1 ♀; Laguna Beach, 1 ♀; Los Angeles Co., 2 ♂, 6 ♀; Matilija, 1 ♀; Monterey, 7 ♂, 1 ♀; Oxnard, 7 ♂, 9 ♀; Pasadena Co., 5 ♂, 5 ♀; Pomona, 6 ♂, 3 ♀; Redondo, 2 ♂; Riverside, 2 ♂, 3 ♀; San Diego, 2 ♂, 3 ♀; Santa Ana, 2 ♂, 1 ♀; Santa Paula, 1 ♀; Saticoy, 24 ♂, 35 ♀; Whittier, 1 ♂; Yosemite Park, 1 ♀.

Utah: Cedar City, 4 ♂; Green River, 1 ♂; Orderville, 1 ♂; Parowa Canyon, 3 ♂; Schwitz Indian Reservation, 1 ♀; Zion National Park, 2 ♂.

***Serica alternata exolita* new subspecies.**

Male. Length, 9.5 to 10.5 mm.; width, 5.5 to 6 mm. Color, brown (chestnut to bay), surface subopaque and faintly iridescent.

On the average, this form differs from typical *alternata* by its distinctly larger size, more distinct clypeal suture, finer and less dense clypeal puncturation, more broadly rounded apical angles of clypeus, and less abruptly and strongly reflexed anterior clypeal margin. The sides of the pronotum are a little less strongly arcuate and the surface somewhat less convex than in *alternata*.

The male genital armature (Pl. XLI) is relatively very thick and stocky with the left clasper abbreviated and its apex showing a distinctive emargination of varying strength.

Type: Male. Giant Forest, Tulare Co., August 8, 1903. (California Academy of Sciences.)

Paratypes: 13 ♂, 7 ♀, all from California.

"Cal.," 1 ♂; "Colony Road," 1 ♀; Cloughs Cave, Tulare Co., 1 ♂; Giant Forest, Tulare Co., 4 ♂, 5 ♀; Kaweah, Tulare Co., 1 ♂; Sequoia National Park, 1 ♂, 1 ♀; (not typical but referred here: San Diego, 2 ♂; San Joaquin Valley, 1 ♂; Laguna Mts., 1 ♂; Southern California, 1 ♂).

***Serica alternata patruela* new subspecies.**

Male. Length, 9.5 to 10.5 mm.; width, 5 to 6 mm. Color, brown (dark chestnut to auburn), subopaque with the elytra moderately iridescent.

This form agrees with *exolita* in size but differs from it rather definitely in the form of the clypeus. The clypeal margins are less strongly reflexed than in any other form yet described from the southwest; the low angle of elevation of the anterior margin reminds one of the clypeal pattern in the Canadian species *tristis* Le Conte. The disk of the clypeus is nearly flat and breaks off rather suddenly into a strongly marked, subterminal, transverse ditch. This character varies somewhat in intensity, but when it is well marked it affords one of the most diagnostic characters available in this section of the genus.

The male genital armature (Pl. XLI) shows its most diagnostic feature in the subspatulate tip to the relatively narrow claspers.

Type: Male. Pasadena, California, July 7, 1931 (Wm. Ackerknecht) (California Academy of Sciences).

Paratypes: 28 ♂, 45 ♀, all from California.

Pasadena, 24 ♂, 43 ♀; Camp Baldy, Los Angeles Co., 2 ♀; (not quite typical but referred here: Burbank, 2 ♂; Sierra Madre, Los Angeles Co., 2 ♂).

Patruela and *exolita* are here listed as subspecies because the evidence at hand indicated inconstancy of form and intergradation with *alternata*. This is one of many cases where facts concerning the biology of the forms would throw much light upon their relationship. To secure such data it is best to point out the problem and name the forms in accordance with the present evidence. It is probable that additional varieties may be defined with profit under the name *alternata*.

***Serica acontia* new species.**

Male. Length, 8 mm.; width, 4.6 mm. Color, brown (auburn to bay), subopaque with a trace of iridescence.

Clypeus relatively wide apically, with prominent, broadly rounded angles; middle of apical reflexed margin arched inwardly; disk with small punctures separated by one-half to two-thirds their own diameter. Clypeal suture very fine but distinct due to a slight impression or angulation between the clypeus and the front. Puncturation of the front variable, but sparser and finer than that of the clypeus. Measurements of head in mm.: diameter through the eyes, 2.06; distance between inner eye margins, 1.44; antennal club, 0.7; dorso-ventral diameter of eye, 0.6.

Pronotum finely punctured, punctures separated by one to two times their own diameter. Measurements of pronotum in mm.: width through posterior angles, 3.6; width through anterior angles, 2.2; median length, 2.06.

Elytra with the odd numbered intervals (especially 5, 7 and 9) slightly narrower than the others; striae line-like with a confused row of fine punctures, separated by slightly more than their own diameter. Intervals flat with scattered punctures, especially near the striae. Measurements of elytra in mm.: median length, 6.3; greatest width, 4.6.

Genital armature of male (Pl. XLII) essentially symmetrical, with jave-lin-like claspers,—hence the name *acontia*; length, 3.2 mm.

Female. Differs from the male in having slightly shorter antennal clubs, 0.5 mm. instead of 0.7 mm., and in having the last sternite less evidently emarginate at the middle.

Type: Male. Paradise Valley, King's River, California, July 15, 1917 (R. L. Beardsley) (California Academy of Sciences).

Paratypes: 11 ♂, 2 ♀, all from California.

Paradise Valley, 1 ♂; Fresno Co., Huckleberry Meadow, 6,500 ft., 7 ♂, 2 ♀; Sequoia National Park, 2 ♂; Tulare Co., 1 ♂.

Serica repanda new species.

Male. Length, 6.5 to 7 mm.; width, 4 mm. Color, brown (chestnut to bay), subopaque, marginal fimbriate hairs relatively sparse and inconspicuous.

Closely resembles *acontia*, but seems to differ as follows: size smaller, clypeal angles less rounded; clypeal suture less evident; front more strongly and closely punctured; pronotum narrower basally; striae of elytra broader and deeper, making the intervals appear distinctly more convex. Measurements of head in mm.: diameter through the eyes, 1.9; distance between inner eye margins, 1.33; extreme width of anterior reflexed margin, 1.16; antennal club, 0.55; dorso-ventral diameter of eye, 0.55. Measurements of pronotum in mm.: width through posterior angles, 3.05; width through anterior angles, 1.94; median length, 1.77. Measurements of elytra in mm.: length, 5; width, 4.

Genital armature of male (Pl. XLIII) of the same general type as in *acontia* and *falcata*; length, 2.4 mm.

Type: Male. Tuolumne Co., California, Coquillett collection (U. S. National Museum).

Paratypes: 4 ♂, all from California.

Tuolumne Co., 3 ♂; Yosemite Valley, 1 ♂.

Serica falcata new species.

Male. Length, 8 mm.; width, 4.3 mm. Color, brown (amber to argus), surface opaque, elytra with a distinct, greyish bloom or pollen showing a trace of iridescence in shifting lights. External characters in general so similar to those of *acontia* that they may as well be indicated by comparison with that species. Color distinctly paler, with greyish pollen and iridescence stronger than in *acontia*. Pronotum evidently smaller and narrower behind than in *acontia*, as indicated by the following measurements: width through the posterior angles, 3.3 mm.; width through the anterior angles, 2.2 mm.; median length, 1.9 mm.

Genital armature of male (Pl. XLIV) of the same fundamental type as that of *acontia*, but differing radically in the relative proportions of the parts and showing a distinct asymmetry in the claspers; length, 2.4 mm.

Female. Differs but slightly from the male in the usual secondary sexual characters.

Type: Male. Santima Road, Cash Creek, Oregon, July 20, 1910 (J. C. Bridwell) (California Academy of Sciences).

Paratypes: 17 ♂, 7 ♀.

California: "Calif.," 1 ♂; Whitehall, Eldorado Co., 3 ♂.

Nevada: "Nev." (Horn collection), 3 ♂.

Oregon: Same data as type, 9 ♂, 7 ♀.

Washington: Wenatchee, 1 ♂.

Serica stygia new species.

Male. Length, 9.5 mm.; width, 5 mm. Color, brown (dark bay to chestnut) with a fairly strong rainbow sheen or iridescence.

This species, also, resembles *acontia* but differs by its larger size, darker color, strong iridescence, and somewhat coarser and more conspicuous fimbriate hairs of the margins and under surface; the short, sparse hairs of the lateral striae of the elytra are also more evident, and the striae stronger, with the intervals somewhat more convex.

Genital armature of male (Pl. XLV) with unusually angular claspers; length, 3.3 mm.

Type: Male. Camp Baldy, Los Angeles Co., California, July 28, 1920 (California Academy of Sciences).

Paratypes: 8 ♂, 6 ♀, all from California.

"Calif.," 4 ♂; Burbank, 1 ♂; Los Angeles Co., 3 ♂, 6 ♀.

***Serica prava* new species.**

Male. Length, 8 mm.; width, 4.3 mm. Color, brown (chestnut to auburn), surface subopaque and faintly iridescent. External characters so similar to those of *acontia* that apparently the narrower and less convex pronotum is the chief feature of differential value. Measurements of pronotum in mm.: width through the posterior angles, 3.3; width through the anterior angles, 2.1; median length, 1.83.

Genital armature of male (Pl. XLVI) very distinct from, though somewhat allied to, that of *stygia*; length, 2.3 mm.

Type: Male. Los Angeles Co., California, July, Coquillett collection (U. S. National Museum).

Paratypes: 13 ♂, 11 ♀, all from California.

"Calif.," 3 ♂; Claremont, 3 ♂, 4 ♀; Cold Creek, 1 ♂; Colton, 1 ♂; Los Angeles Co., 3 ♂, 7 ♀; Mt. Wilson, 1 ♂; "Pom. Mts.," 1 ♂.

***Serica senta* new species.**

Male. Length, 8 to 9.5 mm.; width, 5 to 5.5 mm. Color, brown (auburn to bay), subopaque but with a distinct sheen and iridescence in shifting lights.

Senta appears to average larger than *acontia*. In its general characters, it so closely resembles the *acontia*-like forms named above that individual variation appears to exceed its specific differentiation and one must, therefore, depend upon the male genital armature for certain recognition.

Genital armature of male (Pl. XLVII) radically different from that of *acontia*, but clearly allied to that of *solita*; length, 3.2 mm.

Senta can easily be distinguished from *solita* by lacking the rows of prominent bristling hairs on the elytra.

Type: Male. Sacramento Co., California, Horticultural Commission collection (California Academy of Sciences).

Paratypes: 5 ♂, 4 ♀, all from California.

Sacramento Co., 1 ♂; Sacramento, 1 ♂; Yuba Co., 3 ♂, 4 ♀.